

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

550492W001

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/012265

International filing date (day/month/year)

26.08.2004

Priority date (day/month/year)

International Patent Classification (IPC) or both national classification and IPC

Applicant

MITSUBISHI DENKI KABUSHIKI KAISHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

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Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>1-5</u>	YES
	Claims _____	NO
Inventive step (IS)	Claims _____	YES
	Claims <u>1-5</u>	NO
Industrial applicability (IA)	Claims <u>1-5</u>	YES
	Claims _____	NO

2. Citations and explanations:

Document 1: EP, 0731550, A2 (Mitsubishi Electric Corp.), 11 September, 1996 (11.09.96), page 3, right column, line 56 to page 4, right column, line 40, Figs. 1-9
Document 2: JP, 9-283976, A (Kitagawa Industries Co., Ltd.), 31 October, 1997 (31.10.97), [0021]-[0041], Figs. 1 and 2
Document 3: EP, 1130744, A2 (Calsonic Kansei Corp.), 5 September, 2001 (05.09.01), [0032], Figs. 1-20
Document 4: JP, 9-331166, A (Zexel Corp.), 22 December, 1997 (22.12.97), [0010], Fig. 3 (Family: none)
Document 5: JP, 8-55943, A (Heat Sink & OS Co., Ltd.), 27 February, 1996 (27.02.96), [0006]-[0016], Figs. 1-6
Document 6: Microfilm of the specification and drawings annexed to the written application of Japanese Utility Model Application No. 5223/1990 (Laid-open No. 96088/1991) (Fujitsu General Ltd.), 1 October, 1991 (01.10.91), page 4, line 13 to page 9, line 19, and Fig. 1
Document 7: US, 5619108, A (Komurasaki, et al.), 8 April, 1997 (08.04.97), full text, Figs. 1-13

The subject matter of claim 1 does not appear to involve an inventive step in view of documents 1-3 cited in the ISR. The obvious problem to be solved by the AC generator described in document 1 is to prevent infiltration by electromagnetic noise into a voltage controller. So, a person skilled in the art could have easily applied the means of grounding a heat sink described in document 2 or 3 to intercept the infiltration of electromagnetic noise for solving the technical problem in the invention of document 1.

The subject matter of claim 2 does not appear to involve an inventive step in view of documents 1-4 cited in the ISR. A heat sink provided with a positioning member for positioning the parts to be mounted is a well-known technical matter in the technical field relating to a heat sink, as described in documents 3 and 4.

The subject matter of claim 3 does not appear to involve an inventive step in view of documents 1-4 cited in the ISR. A heat sink provided with a shielding portion for preventing the radiation of electromagnetic noise to other portions is a well-known technical matter in the technical field relating to a heat sink, as described in documents 2 and 3.

The subject matter of claim 4 does not appear to involve an inventive step in view of documents 1-4 cited in the ISR. The invention described in document 1 also has a mold package in which an IC chip is enclosed in a resin.

The subject matter of claim 5 does not appear to involve an inventive step in view of

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documents 1-6 cited in the ISR. In the technical field relating to the cooling of IC chips, it is a well-known technical matter as also described in documents 5 and 6, that a hexahedron-shaped IC chip is installed in a heat sink U-shaped in cross sectional form, in such a manner that at least three faces excluding the faces having connection terminals projected are kept in contact with the heat sink.